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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,247	10/11/2001	Thomas R. Forrer JR.	AUS920010757US1	9619

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EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT PAPER NUMBER

2127

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,247

Applicant(s)

FORRER, THOMAS R.

Examiner

Lewis A. Bullock, Jr.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-10 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 4-7, 11-14 and 18-21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 8, 10, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by HAGERSTEN (U.S. Patent 5,749,095).

As to claim 1, HAGERSTEN teaches a method in a data processing system including a storage device, the method comprising the steps of: providing a write cache (buffer / cache) in the storage device; and executing a fast write operation (write operation performed before completion of coherency operation) utilizing the write cache only when writing particular types of data (predefined encoding), wherein a command complete status (via coherency operation) is returned prior to writing data during the fast write operation and a command complete status (via coherency operation) is returned only after writing data when the fast write operation is not executed (write operation performed after completion of coherency operation) (col. 31, line 63 – col. 32, line 10; col. 32, lines 36-50; col. 27, lines 16-32; col. 27, lines 36-38; col. 27, lines 41-64; col. 28, lines 1-14; col. 28, lines 35-57; col. 24, lines 25-30; col. 29, lines 6-20; col. 31, lines 29-35).

As to claim 3, HAGERSTEN teaches receiving an instruction to write first data to the storage device (via write instruction); determining whether the first data is the particular type of data (predefined encoding); in response to a determination that the first data is the particular type of data, returning a command complete status (via coherency operation) and then writing the first data to the storage device (via fast write operation); and in response to a determination that the first data is the not particular type of data, writing the first data to the storage device (via write operation) and then returning a command complete status (via coherency operation) (col. 31, line 63 – col. 32, line 10; col. 32, lines 36-50; col. 27, lines 16-32; col. 27, lines 36-38; col. 27, lines 41-64; col. 28, lines 1-14; col. 28, lines 35-57; col. 24, lines 25-30; col. 29, lines 6-20; col. 31, lines 29-35).

As to claims 8 and 10, reference is made to a computer program product that corresponds to the method of claims 1 and 3 and is therefore met by the rejection of claims 1 and 3 above.

As to claims 15 and 17, reference is made to a system that corresponds to the method of claims 1 and 3 and is therefore met by the rejection of claims 1 and 3 above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over HAGERSTEN (U.S. Patent 5,749,095) in view of BEARDSLEY (U.S. Patent 6,513,097).

As to claim 2, HAGERSTEN substantially discloses performing a coherency operation before or after a write operation based on the encoding of the operation (col. 5, lines 39-65) as well as, not limiting the system onto the interpretation of a predefined encoding (col. 31, lines 54-61). However, HAGERSTEN does not teach the fast write operation is performed only when the data is sequential data, i.e. that the pre-defined encoding is based on sequential data.

BEARDSLEY teaches the step of executing the fast write operation when writing particular amounts of sequential data (col. 6, lines 28-55). It would be obvious to one of ordinary skill in the art at the time of the invention that the predefined encoding of when to execute fast write operations is based on whether the data is sequential. Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of HAGERSTEN with the teachings of BEARDSLEY in order to save significant amounts of bus bandwidth (col. 2, lines 41-53).

As to claim 9, reference is made to a computer program product that corresponds to the method of claim 2 and is therefore met by the rejection of claim 2 above.

As to claim 16, reference is made to a system that corresponds to the method of claim 2 and is therefore met by the rejection of claim 2 above.

Allowable Subject Matter

5. Claims 4-7, 11-14, and 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The cited claims detail that when the execution of a fast write operation is performed and when a standard write operation is performed. The cited claims detail steps wherein upon receiving an instruction to write data to a storage device, determinations are made of whether the first data is sequential and can be written within a particular time frame. If both determinations are positive, the data is written using the fast write operation wherein a command complete status is returned prior to writing the first data to the storage device. If either or both determinations are negative, the data is written using a standard write operation wherein the data is first written to the storage device and then a complete status is returned. The prior art of record does not teach the cited novel limitations. Hagersten (U.S. Patent 5,749,095) at best teaches

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performing a fast write if the operation is of a first predefined encoding, otherwise performing a standard write operation. Beardsley (U.S. Patent 6,513,097) at best teaches during a detection of a fault in the power system, the back up battery will allow the processor/storage controller to destage data stored in the cache that was received via a fast write operation to the storage device for a limited amount of time, i.e. five minutes, wherein the controller selects sequential data from the stored cache data because of the likelihood of destaging all modified sequential data from the cache during emergency power from the backup battery. The cited prior art of record does not perform the cited determinations in order to perform either a fast write operation or a write operation as disclosed in the claims. In Hagersten, the determination does not determine whether the data can be sent in a predetermined amount of time and in Beardsley, all data is received via a fast write and subsequently destaged in the predetermined amount of time instead of making the initial determinations. Therefore, the claims are allowable over the cited prior art of record.

Conclusion

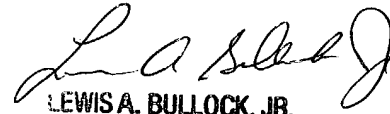
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (703) 305-0439. The examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm. In late-October, the examiner can be reached on (571) 272-3759.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (703) 305-9678. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306. In late-October, the examiner supervisor can be reached on (571) 272-3756.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 12, 2004


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER